Case report / *Olgu sunumu*

A common possible genetic etiology in trichotillomania and posttraumatic stress disorder comorbidity: a case report

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ABSTRACT

Trichotillomania (TTM) is a psychiatric disorder can be triggered by traumatic events characterized by recurrent hair pulling. The incidence of post-traumatic stress disorder (PTSD) in TTM patients was also significantly higher than in the normal population. It is estimated that serotonergic system, dopaminergic system, hypothalamic-pituitary-adrenal (HPA) axis genes may be related with PTSD and TTM co-occurrence. When the literature is reviewed it is seen that serotonergic system gene especially 5HT-2A gene polymorphism may play an important role as a common possible genetic background in the etiology of posttraumatic stress disorder and trichotillomania. It was also observed that effective results were obtained when agents acting on 5HT-2A receptor were preferred in the treatment. Here, we report a 20-year-old male patient who was diagnosed with TTM and PTSD as a result of traumatic life event a year ago and we also aimed to discuss a possible common genetic etiology which may cause this comorbidity. ***(Anatolian Journal of Psychiatry 2019; 20(1):110-112)***

Keywords: *trichotillomania, posttraumatic stress disorder, psychological trauma, gene*

Trikotillomani ve travma sonrası stres bozukluğu komorbiditesinde ortak olası genetik etiyoloji: Bir olgu sunumu

ÖZ

Trikotillomani (TTM) yineleyen saç yolma davranışı ile karakterize, travmatik olaylarla tetiklenebilen bir psikiyatrik bozukluktur. TTM hastalarında travma sonrası stres bozukluğu (TSSB) görülme sıklığı normal insanlara göre anlamlı derecede yüksektir. Serotonerjik sistem, dopaminerjik sistem ve hipotalamo-hipofiz-adrenal (HPA) aks genlerinin TSSB ve TTM hastalığının eş zamanlı meydana gelmesi ile ilişkili olabileceği tahmin edilmektedir. Literatürde özellikle 5HT-2A serotonerjik sistem gen polimorfizminin, travma sonrası stres bozukluğu ve trikotillomaninin etiyolojisinde ortak olası genetik temel olarak önemli rol oynayabileceği görülmekle birlikte, uygulamada da tedavide 5HT-2A reseptörü üzerine etkili ajanlar tercih edildiğinde olumlu sonuçların alındığı görülmektedir. Bu olgu sunumunda da, bir yıl önce uğradığı travmatik bir yaşantı sonucunda gelişen TSSB ve buna eşlik eden TTM'si olan 20 yaşındaki erkek hasta, mevcut komorbiditeye neden olabilecek altta yatan olası ortak genetik etiyolojinin ışığında ele alınmıştır. ***(Anadolu Psikiyatri Derg 2019; 20(1):110-112)***

Anahtar sözcükler: *Trikotillomani, travma sonrası stres bozukluğu, psikolojik travma, gen*

INTRODUCTION

Trichotillomania (TTM) is a characterized by the repetitive pulling of one's hair and impairment of functioning.[1] TTM was included in the section on 'obsessive compulsive and related disorders' with obsessive-compulsive disorder (OCD), skin picking, body dysmorphic disorder and hoarding disorder in the DSM-5.[2] Studies also have found that 76-91% of persons with TTM have a history of at least one traumatic life event.[3,4] Approximately 19% of these persons have a lifetime

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diagnosis of post-traumatic stress disorder (PTSD).[4] It is aimed to present a 20-year-old male patient who applied to Emergency Psychiatry Clinic of Bakırköy by considering the literature information. We postulate that trauma and PTSD may be implicated in the etiologic underpinnings of TTM and we will discuss the serotonin system genes, which take place in the common genetic background of PTSD and TTM, in this case report.

CASE

A 20-year-old, single and unemployed male patient presented to emergency psychiatry clinic with anxiety, aggression, irritability, pulling out hair from different parts of the body for a year. In the physical examination, it was seen that he had pulled hair out from the roots of eyebrows and beard. When the anamnesis was deepened, it was learned that the patient had lost his best friend in a traffic accident a year ago. He learned that his friend died of internal bleeding shortly after he was transferred to hospital. The patient reported that ever since he saw the fragmented dead body of his friend, he never forgot that day; his friend is always in front of his eyes. The patient had sudden reactions even when he hears any noise coming from environment. Additionally, his sleep quality is also disturbed because of nightmares. He said that he was hesitant to admit to the hospital because hospi-tals remind him of his friend's accident. As a result, he applied to emergency clinic rather than outpatient clinic. Fluoxetine 20 mg/day and risperidone 0.5 mg/day were prescribed to improve pulling hair and anxiety. It was learned that the complaints of the patient such as pulling out hair and anxiety were improved at the end of the first month and then in the second month all the symptoms including pulling out hair, anxiety about these hairless areas, irritability and aggression to his family were almost resolved. The patient was sleeping better and free of nightmares. The patient was able to enter the outpatient psychiatry clinic in hospital to be examined and even left, the town to do military service since his functionality returned to normal.

DISCUSSION

When we questioned the patient, we actually learned that these complaints had begun after seeing the fragmented body of a close friend a year ago (Criterion A and F). Nightmares about dead bodies, flashbacks and emotional stress after exposure to traumatic reminders existed (Criterion B). He also mentioned about avoidance of trauma-related stimuli that he really could not enter the hospital and he came to emergency psychiatry clinic with his family instead of outpatient clinic (Criterion C). After traumatic event occurred, he had also showed some symptoms like irritability, aggression and heightened startle reactions (Criterion D and E).[2] Therefore the hair pulling might function as a maladaptive coping for negative mood caused by trauma. Indeed, Gershuny et al. found that symptoms of PTSD were negatively correlated with symptoms of TTM.[4] The hair pulling problem has some clues that it may be related to the 5-HT2A, SLC6A4, HOXB8, SLITRK1, SAPAP3, DRD1, DRD4 genes.[5,6] Hemmings et al. show that the 5HT2A t103c variant differed between patients with TTM and control group. The authors emphasized that these findings were consistent with studies showing that 5-HT2A mediates impulse control deficits.[7] The most interesting dilemma in PTSD is why only some of exposed subjects develop PTSD following trauma exposure. It is clear that a component of this differential risk is genetic. Heritability appears to account for 30-40% of variance contributing to risk for PTSD in twin studies.[8,9] Many studies of candidate gene for PTSD have been published to date including genetic variants in the serotonergic (5-HTTLPR, 5-HT2A), dopaminergic (DRD2, DBH, COMT), HPA axis (CNR1, CRHR-1, FKBP5, PAC1, ADCYAP1R1) and additional candidate genes (BDNF, NPY, MAO-B, APO-E, GABRA-2, RGS-2).[10] Dysregulation of brain serotonergic systems has been implycated in the pathophysiology of PTSD particularly.[11] The most widely studied polymorphism in serotonergic system is located in the promoter region of the serotonin transporter (5-HTTLPR, SLC6A4, rs25531) and most of them declare that risk is associated with genotype (mainly S-allele carriers) and high trauma.[10] Another variant in the serotonin system, as it was also obtained in the TTM gene studies is the 5-HT2A polymerphism (rs6311).[11,12] In the literature, 5-HT2A has received much attention in psychiatric research, because several post-mortem studies suggested that there was an increase in the number of 5-HT2A receptors in the frontal cortex of depressed and suicide victims and many genetic studies have reported that 5-HT2A gene variants were related with various psychiatric disorders. Although there is no clear genetic study of the underlying mechanism of PTSD and trichotillomania comorbidity, it has been shown in previous studies that the serotonergic system especially 5-HT2A may play an important role in

causing of TTM and PTSD separately among all other systems.[13] There are also no pharmacological agents approved by FDA for the use of trichotillomania until now. Although recent studies have shown that olanzapine monotherapy and N-acetylcysteine have an important role in the treatment of TTM, some researchers have been thought to treat TTM with combination of atypical neuroleptics and SSRI's because of similarity between the repetitive behaviors of tic disorders and TTM.[14-18] We started the treatment of the patient with fluoxetine 20 mg/day and risperidone 0.5 mg/day in this direction. Risperidone has a very high affinity for 5-HT2A receptors, and moderately high affinity for D2, H1, and α1- and α2- adrenergic receptors. The affinity of risperidone for 5-HT2A is roughly 10- to 20-fold greater than D2 receptors.[19] Since three cases had been reported treated with risperidone addition in SSRI-resistant TTM[20] and a 22-year-old woman with antisocial personality disorder and comorbid TTM treated with risperidone in the literature,[21] we had preferred risperidon combined with a SSRI may be effective in treatment of TTM and PTSD co-occurrence also. Neurobiological knowledge of the co-pathogenesis of TTM and PTSD is not at the desired level yet. It is estimated that the problem is multi-factorial and serotonergic system, dopaminergic system; hypothalamic-pituitary-adrenal axis genes have clues that may be related to the problem therefore genome-wide association studies are needed to find mutations.

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